

Remarks

This is in response to the non-final Office Action mailed on November 25, 2005. Claims 1-9, 12-31, and 34-45 remain pending. Reconsideration and allowance are requested for at least the following reasons.

I. Claim Rejections - 35 U.S.C. 103

In section 7 of the Action, claims 1-4, 6-9, 13-16, 20-26, 28-31, 35-38, and 43-45 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Koltai et al., U.S. Patent No. 6,104,812, in view of McGrew, U.S. Patent No. 5,396,559. This rejection is respectfully traversed, and reconsideration is requested for the following reasons.

Claim 1 is directed to a method for producing an optical watermark on a document. Claim 1 recites, among other limitations, embedding each latent image object into its respective watermark layer by phase modulation.

As stated in a previous response, one skilled in the art at the time of invention would understand the phrase "phase modulation" to mean the transmission of a signal by imposing the signal on a carrier wave by changing the carrier wave's phase. In the context of claim 1, one skilled in the art would understand the phrase "phase modulation" to mean embedding a latent image into a watermark layer by imposing the latent image on a dot pattern carrier by changing the dot pattern's phase. See, for example, paragraphs 5 and 6 of the Declaration under 37 CFR 1.132 of co-inventor Wu Jian Kang ("Wu Declaration") that is attached at the Appendix hereto.

Although the correctness of the Action's interpretation of Koltai is not conceded, the Action states that Koltai fails to explicitly disclose embedding each latent image object into its respective watermark layer by phase modulation, as recited by claim 1. The Action cites McGrew as disclosing dot patterns where one is phase modulated with respect to the other. The Action states that it would have been obvious to one skilled in the art to combine McGrew with Koltai to arrive at the claimed invention. For at least the following reasons, it is suggested that, even if McGrew can be combined with Koltai (the ability to combine is not conceded), neither reference, alone or in combination, discloses or suggests embedding each latent image object into its respective watermark layer by phase modulation, as recited by claim 1.

McGrew fails to disclose phase modulation as defined above and recited in claim 1. For example, McGrew discloses at column 4, lines 39-43, two patterns of dots, including a reference pattern (see Figure 4A) and a message pattern (see Figure 4B). The message pattern is a modulated version of the reference pattern "with the dots 431, 432 within the boundary letter 'A' being offset a distance equal to the width of a dot." McGrew, col. 4, ll. 63-67. Therefore, the modulation disclosed by McGrew is once again a simple alteration of a dot pattern or the repositioning of dots similar to that disclosed in Koltai. McGrew fails to disclose or suggest phase modulation as defined above and recited by claim 1.

Both Koltai and McGrew disclose modulation that involves the simple alteration of a dot pattern or repositioning of dots. Neither discloses or suggests phase modulation as recited by claim 1, namely the embedding of a latent image into a watermark layer by imposing the latent image on a dot pattern carrier by changing the dot pattern's phase. Reconsideration and allowance of claim 1, as well as claims 2-4, 6-9, 13-16, and 20-22 that depend therefrom, are therefore requested.

Claim 23 is directed to an optical watermark stored on a computer-readable medium. Claim 23 recites, among other limitations, at least one latent image object embedded into each watermark layer by phase modulation. Claim 23 is allowable for at least reasons similar to those provided above with respect to claim 1. Reconsideration and allowance of claim 23, as well as claims 24-26, 28-31, 35-38, and 43-45 that depend therefrom, are therefore respectfully requested.

In sections 8-13 of the Action, claims 5, 12, 17-19, 27, 34, and 39-42 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Koltai and McGrew in view of various tertiary references. These rejections are respectfully traversed, and reconsideration is requested for at least the following reasons.

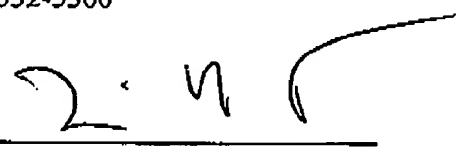
Claims 5, 12, 17-19, 27, 34, and 39-42 all depend respectively from one of claims 1 and 23. None of the tertiary references remedies the shortcomings of Koltai and McGrew noted above. Therefore, claims 5, 12, 17-19, 27, 34, and 39-42 are allowable for at least the same reasons as those provided above with respect to claims 1 and 23. Reconsideration and allowance are therefore respectfully requested.

II. Conclusion

Favorable reconsideration in the form of a Notice of Allowance is respectfully requested.
Please contact the undersigned attorney with any questions regarding this application.

Respectfully submitted,
MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332-5300

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Name: Brian H. Batzli
Reg. No.: 32,960

Attachment: Appendix